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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.								
10/849,724	05/20/2004	Tetsuya Takiguchi	JP920030128US1	8657								
<div>7590 07/17/2007 On behalf of IBM CORPORATION Anne Vachon Dougherty, Esq. 3173 Cedar Road Yorktown Heights, NY 10598</div>			<div>EXAMINER VO, HUYEN X</div> <table border="1"><thead><tr><th>ART UNIT</th><th>PAPER NUMBER</th></tr></thead><tbody><tr><td>2626</td><td></td></tr></tbody></table> <table border="1"><thead><tr><th>MAIL DATE</th><th>DELIVERY MODE</th></tr></thead><tbody><tr><td>07/17/2007</td><td>PAPER</td></tr></tbody></table>		ART UNIT	PAPER NUMBER	2626		MAIL DATE	DELIVERY MODE	07/17/2007	PAPER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/849,724

Applicant(s)

TAKIGUCHI ET AL.

Examiner

Huyen X. Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 12-13 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

3. Claims 12-13 are drawn to a "program" *per se* as recited in the preamble (*storage medium can be considered a carrier wave*) and as such is non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical "things." They are

neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless – (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi et al. (US 6026359).

6. Regarding claims 1, 7, and 12-13, Yamaguchi et al. disclose a speech recognition device, method, program, and computer-readable medium configured to include a computer, the speech recognition device comprising:

a storage area for storing a feature quantity acquired from a speech signal for each frame (*figure 3 includes a buffer memory for temporarily storing the received speech signal for processing*);

storing portions for storing acoustic model data and language model data, respectively (*referring to figure 3, speech HMM 4; language model or grammar or dictionary is inherently included in the speech recognizer 13*);

an echo adaptation model generating portion for generating echo speech model data from a speech signal acquired prior to a speech signal to be processed at the current time point and using the speech model data to generate adapted acoustic model data (*Updating HMM 10 in figure 3; echo is considered a type of noise; any noise source that is generated by the environment is considered an echo signal*); and

recognition processing means for utilizing said feature quantity, said adapted acoustic model data and said language model data to provide a speech recognition result of the speech signal (*figure 3*).

7. Regarding claims 2, Yamaguchi et al. further disclose the speech recognition device according to claim 1, wherein said adapted acoustic model generating means comprises: a model data area transforming portion for transforming cepstrum acoustic model data into linear spectrum acoustic model data (*figure 2*); and an echo prediction coefficient calculating portion for adding said echo speech model data to said linear spectrum acoustic model data to generate an echo prediction coefficient giving the maximum likelihood (*figure 2*).

8. Regarding claim 3, Yamaguchi et al. further disclose the speech recognition device according to claim 2, further comprising: an adding portion for generating echo speech model data (*referring to figure 3 and/or 2*); wherein said adding portion adds the cepstrum acoustic model data of said acoustic model and cepstrum acoustic model data

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of an intra-frame transfer characteristic to generate a speech model affected by intra-frame echo influence (*referring to figure 3*).

9. Regarding claim 4, Yamaguchi et al. further disclose the speech recognition device according to claim 3, wherein said adding portion inputs said generated speech model affected by intra-frame echo influence into said model data area transforming portion and causes said model data area transforming portion to generate linear spectrum acoustic model data of said speech model affected by intra-frame echo influence (*referring to figure 2*).

10. Regarding claim 5, Yamaguchi et al. further disclose the speech recognition device according to claim 4, wherein said echo prediction coefficient calculating portion uses at least one phoneme acquired from an inputted speech signal and said echo speech model data to maximize likelihood of the echo prediction coefficient based on linear spectrum speech model data (*referring to figures 2-3*).

11. Regarding claim 6, Yamaguchi et al. further disclose the speech recognition device according to claim 5, performing speech recognition using a hidden Markov model (*referring to figure 3*).

12. Regarding claims 8-11, Yamaguchi et al. further disclose the subject matters claimed in claims 8-11 (*referring to claims 2-6*).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Komori et al. (US 5956679) and Goldberg et al. (US 5970446) are considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huyen X. Vo whose telephone number is 571-272-7631. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HXV



6/27/2007